

Exercitatio Geometrica de DIMENSIONE FIGURARUM, Authore Davide Gregorio, in *Academia Edinburgensi Mathematicos Professore*. Edinburgi in 4°. 1684.

IN this Treatise, the Author first takes notice of a Treatise of his Uncle Mr. *James Gregory* printed at *Padua*, in the year 1667, entituled *Vera Circuli & Hyperbolæ Quadratura*, &c. Wherein he shews, that any Sector of the Circle, Hyperbola, or Ellipse, is, the termination of a certain Converging Series; whose two first Terms are A and B; whereof A is a Triangle, which, as to the Circle or Ellipse, is Inscribed; but, as to the Hyperbola, Circumscribed, to the said Sector: and B, a Trapezium, which (contrarywise) as to the Circle or Ellipse, is Circumscribed; but as to the Hyperbola, Inscribed, to the said Sector: The two second terms, \sqrt{AB} and $\frac{AB}{\sqrt{AB}}$: the two thirds, in like manner derived from the seconds, as these are from the first. And so infinitely, with other things appertaining to the same, and to other such like approximations.

He then mentioneth another method, (different from that former) published at *London*, the year following, by Mr. *Nicolaus Mercator*, in his *Logarithmotechnia*, for squaring the Hyperbola, by the help of *Infinite Series*. Approved also, and demonstrated, afterwards, by Mr. *James Gregory*, Apagogically. But, that a General method, for such cases was yet wanting.

That about the beginning of the year 1670. he understood from Mr. *John Collins*, that Mr. *Isaac Newton* (Professor of Mathematicks at *Cambridge*) had, before that time, a General method for such Quadratures, and other like

like cases. Whereof (as an Instance) Mr. *Collins* sent him an example, of such an Infinite Series, accommodated to a Circular Zone; namely, if the Radius be R , and the breadth of the Zone B ; the Zone is equal to

$$2R\text{E} - \frac{B^2}{3R} - \frac{B^2}{2R^2} - \frac{B^2}{56R^3} - \frac{5B^2}{576R^4} - \&c.$$

That Mr. *James Gregory* was in pursuit of like methods of *Infinite Series*; but was prevented by Death; and (beside some particular examples) left nothing in his Papers (yet come to his hands) that might declare his method and way of finding such examples.

That himselfe (Mr. *David Gregorie*) doth (in this treatise) make it his business to explain a method, which may suit such examples of his Uncle.

And he doth here assume (though in other words) the Doctrine of Indivisibles, and the Arithmetick of Infinites, as already known; and received by Geometers as sufficiently Demonstrated. And applies this to particular cases, in this manner; Supposing a streight line or Axis, which he calls X , cut into parts infinitely small, and the respective values of each L (which he calls *Elementum*,) or small part of the Curve, Plain, or Solid which is to be measured; answering to each of those particles of X ; (or at least somewhat so near the values of L , as that the difference may be neglected; as when a short Subtense or Tangent, is taken as coincident with a Curve;) he doth (according to the Doctrine of Infinites) collect the aggregates of all such L ; which Aggregate is the Magnitude sought.

Of this he gives diverse examples in Parabola's, Hyperbola's, Ellipses, Spirals, Cycloids, Conchoids, Cissoids, and some other Curves, or Curve-lined Figures; as to their Area's, and Curve-lines, with the Solids, and Curve-surfaces, made by conversion of them, or otherwise derived from them.

Together

Together with divers expedients, or preparative observations, (by Division, and extraction of Roots, in Species,) for reducing of implicated quantities (when need requires) into infinite series; thereby rendring them capable of having the method of Infinites applyed to them.

And concludes, with expressing his hopes and expectations, that Mr. *Newton's* methods to this purpose (long since contrived, but not yet published in Print) will now shortly be made publick.

L' Art de Tailler, &c. The Art of Pruning Fruit-Trees, and a Tract of the use of the Fruits of Trees, for preserving us in health, or for curing us when we are sick. Translated from the French Original, set forth the last year by a Physitian of Rochel. Printed at London in 8°. 1685.

THE Author of this Book, who is a member of the College of Physitians at *Rochell*, having taken a particular delight in the Cultivation of Fruit-Trees, and in considering the use of their Fruits, gives us here the rules which many years experience has taught him on those subjects; he conceiving to have herein outdone what any man has yet written on the like occasion.

The first part of this Book, which contains the Art of Pruning or Lopping Fruit-Trees consists of four Chapters, and the Author has caus'd seven Figures to be Grav'd, which he judg'd necessary for the understanding of what he says. The first Chapter treats of the Lopping of Fruit-Trees for the Month of *February*. The second explains that of the Month of *May*. The third teaches the Lopping for the end of *May*, and for the beginning of *June*. And the fourth comprehends that of *July*.

The Tract of the use of fruits has three Chapters, divided into several Articles: In the first Chapter he shews the time and the way of using Fruits which corrupt easily, as Eggs, Necterins, Peches, Plums, Apricocks, Mulberries, Cherryes; which ought allways to be eaten, the Stomach empty and before meals. The second treats of those which do not corrupt easily, and which ought to be eaten after meals, as Pears, Apples, Portugal Quinces, Medlers, and Services. The third explains how we may eat before or after meals Raisins, *Portugal* and *China* Oranges,

Oranges, *Spanish* Pomegranates, and Corands. Speaking of Raisins, he tells us of an excellent sort of drink made of dry'd Raisins, call'd *Cabal*. They take out the stones of fifteen or twenty pounds of Raisins, and then they bruise the Raisins a little: and in the Month of *January* or *February*; at which time Raisins are brought them from *Spain*, they put them into a barrel of excellent White-wine to be drank at Easter. This Wine, he says, will have the colour of Sack, it will be pleasant to the tast, and will have qualities not to be Contemn'd: for it lenifies the breast, allays Coughs, helps Respiration, and fortifies the Stomach and Liver, gives an Appetite, stops Looseness, opposes inclinations to Vomit: In a word it is an excellent Remedy for the Dropsy, and it wonderfully agrees with old Men, Valetudinarians, Flegmatick and Melancolick Persons, and with tender Women. *So far the Author*. It is conceiv'd that if a tryal be made with a like quantity of Raisins in our English Beer or Cyder, it may prove no contemptible drink. This book is newly put into English, and sold by *Tho. Bassett* at the *George St. Dunstons Church in Fleetstreet*.

E R R A T A.

PAg. 595. l. 18. r *Viviparous* l. 28. r *Bassenburne*. p. 596. l. 20. r. 1670. p. 598. l. 27. r. 1670. p. 671. l. 19. for read r. *ind*. p. 699. l. 1. for a *Journal*, r. the *Journal*. l. 3 for read, r *ried*. l. penult. for *wrinthes*, r. *wrinkles*. p. 701. after [*but broken off in Separation*] add [*the lines of this Figure should have been made to run secundum longitudinem Stomachi, to represent the Fibres of the inner tunic, running that way, as in B B' B' of Fig. 10. as they now run, they intimate that those Fibres are circular, for which there is no foundation in nature.* p. 714. l. 14. r. *lie*.

O X F O R D,

Printed at the *THEATER*, and are to be sold by *Moses Pitt*, at the *Angel*, and *Samuel Smith*, at the *Princes Arms* in *St. Paul's Church-yard* LONDON. 1684.

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